A NEW SPECIES OF LANTANA (VERBENACEAE) FROM DOMINICA, LESSER ANTILLES

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Lantana hodgei Sanders is described from Dominica and is contrasted with *L. camara* L. and *L. urticifolia* Miller on the basis of gross morphology, scanning electron microscopy of laminar surfaces, and pollen stainability.

Studies of *Lantana* L. (Verbenaceae) for the *Flora of the Lesser Antilles,* edited by Richard A. Howard, reveal the existence of an undescribed species from the montane forests of the island of Dominica.

Lantana hodgei R. Sanders, sp. nov. FIGURE 1.

Differt a Lantana camara L. habitu subscandenti, trichomatibus caulium foliorumque brevioribus sparsioribus validius appressis, petiolis longioribus, laminis angustioribus circa duplo longioribus quam latioribus supra subtusque nitentibus subtus subviridi-griseis, nervis secundariis nervellisque laminarum subtus non elevatis; a L. urticifolia Miller trichomatibus laminarum remotis non nisi nervis mediis secundariis tertiariisque insidentibus angustate conicis antrorse geniculatis.

Subscandent shrub; main branches 2–3 m long, usually few, weak, trailing or sprawling, usually without prickles, often scabrous with scattered appressed hairs 0.2–0.6 mm long. Leaves with petiole 1–2.5 cm long; lamina ovate to elliptic-lanceolate, 5–13 cm long, usually 1.7–2.5 times longer than wide, non-rugose, the higher-order and often the secondary veins not impressed above or keeled below, the apex usually abruptly acuminate, the base attenuate to shortly attenuate, the margin serrate-dentate, with teeth 20 to 40 per side, 1–2 mm long, 1–3 times longer than wide, the adaxial surface dark green, lustrous, thinly strigillose, with hairs very sparse, restricted to midrib, secondary veins, and center of major areoles (1 hair per areole), to 0.4 mm long (0.8 mm on veins), often deciduous, the abaxial surface gray-green, lustrous, nearly glabrous, with hairs very sparse, restricted to midrib and secondary and tertiary veins, tapering-conical, 0.1–0.5 mm long, geniculate toward base, antrorse, strongly appressed, weak, often deciduous. Inflorescences capituliform spikes in axils of distal leaves; peduncle 2–3 cm long; receptacle fistulose; bracts (excluding single outer series) narrowly lanceolate, ca. 5 mm long, widest near proximal third, deciduous in fruit, abaxially sparsely hirsute, hairs strongly appressed. Calyx ca. 2 mm long, 2- or 3-toothed; corolla salverform, bilaterally

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4-lobed, tube 5–8 mm long (when dried), limb ca. 6 by 4–5 mm, orange to red (sometimes dull pink, according to note on *A. C. Smith 10216*). Drupes 4–5 mm across, black; pyrenes obovoid, 3–4 by 3 mm, bilocular, inflated, basally acute, distal ornamentation semicircular, shallow, oblique, not trilobed.

TYPE. Dominica, near Fresh Water Lake, common along road, steep slopes in "elfin forest," 10 March 1967, *F. R. Fosberg 48269* (holotype, US!; isotypes, F!, GH!, K [*fide* C. H. Stirton], MO!, NY!).

DISTRIBUTION AND ECOLOGY. Known only from Dominica on sunny slopes in borders and openings of montane rainforest, 450–900 m alt. Flowering and fruiting January to August, possibly year-round.

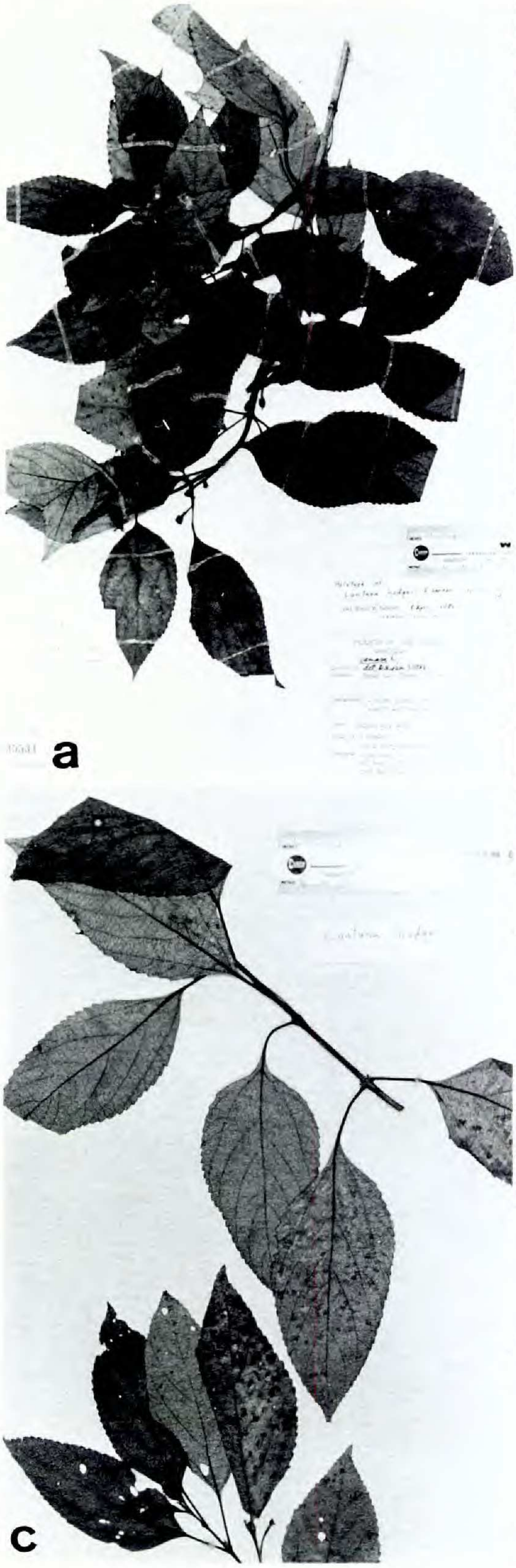
ADDITIONAL SPECIMENS EXAMINED. **Dominica:** S slope of Morne Macaque on road to Fresh Water Lake, *Ernst 1728* (US); between Laudat and Fresh Water Lake, *Hodge & Hodge 1808* (US), *A. C. Smith 10216* (A, NY, UC, US); Laudat, *Lloyd 201* (NY), *Nicolson 2102* (FTG); Springfield, *Krauss 1268* (LL); Sylvania, Morne Colla Anglais, *Cooper 5* (F, GH, NY, US), *Hodge 861* (GH), *1038* (GH), *1115* (GH).

EPITHET. The epithet honors Walter H. Hodge, whose extensive collections have helped to elucidate the nature of this species.

Two other species of *Lantana* sect. *Camara* Cham., *L. camara* L. and *L. urticifolia* Miller, occur in Dominica and the Lesser Antilles and could be confused with *L. hodgei*. The three taxa are contrasted in the following key:

1. Hairs of abaxial leaf surface sparse, restricted mostly to midrib and secondary and tertiary veins, tapering-conical, geniculate toward base with distal ⅔ parallel to lamina or vein surface.
   2. Laminas 1.2–1.6 times longer than wide; base usually truncate or cordate; adaxial surface at maturity scabrous or strigose, more or less dull, moderate green, the hairs scattered over entire surface, stout, usually persistent (at least the conical bases); abaxial surface lighter yellow-green, thinly strigose on veins, the hairs scattered to moderately abundant, stout, antrorse but with tip held above surface, the secondary and higher-order veins keeled. ..... *Lantana camara.*
   2. Laminas ca. 1.7–2.5 times longer than wide; base usually attenuate; adaxial surface at maturity lustrous, dark green, smooth, the hairs restricted to veins and 1 in center of each areole, small, weak, often deciduous; abaxial surface pale gray-green, almost glabrous, the hairs very sparse, weak, strongly appressed, the higher-order and usually secondary veins not keeled. ..... *Lantana hodgei.*
1. Hairs of abaxial leaf surface usually abundant and crowded, at least along crevice between major veins and laminar surface, usually occurring on all veins including areolar veinlets and often on noninnervated laminar tissue, filiform (or also gland tipped), straight or gently curved from basal insertion, spreading from vein surface or erect on laminar surface. ..... *Lantana urticifolia.*

Lantana hodgei is probably closely related to *L. camara* because both species have tapering, geniculate hairs on the abaxial leaf surfaces (FIGURE 2b, d). *Lantana camara* is commonly encountered in both native and apparently naturalized populations throughout the West Indies and northern South America and is a morphologically variable species. Thus, *L. hodgei* has been considered conspecific with *L. camara* in past studies (Moldenke, 1980 and *in*



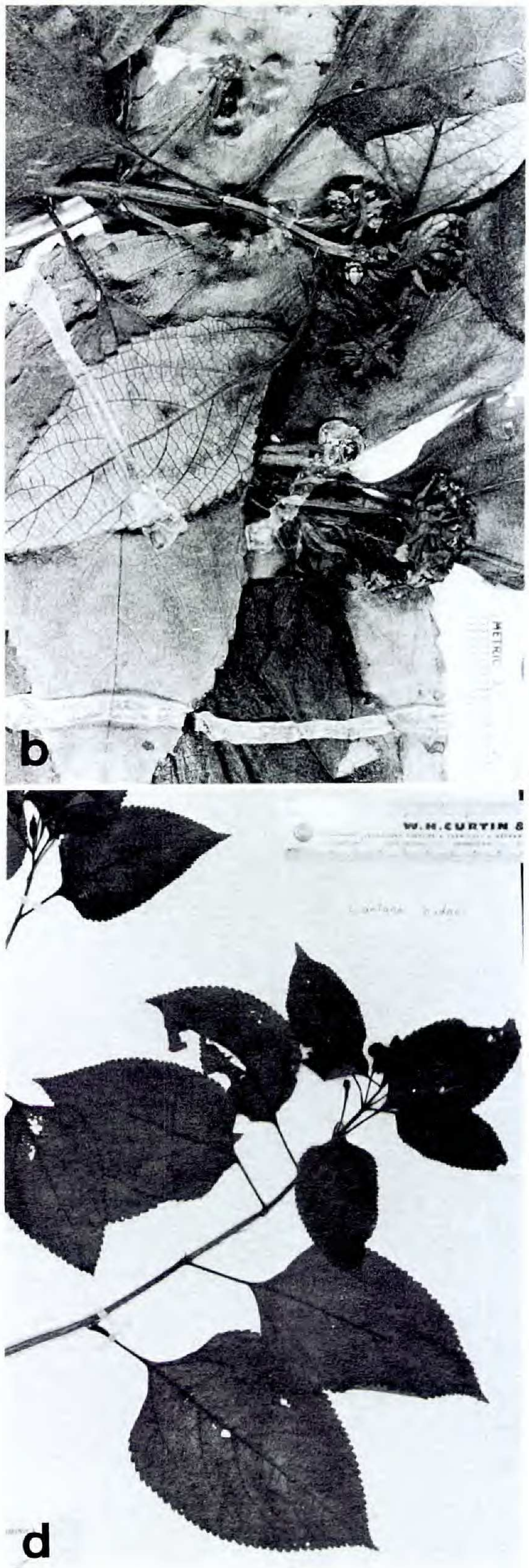


FIGURE 1. *Lantana hodgei,* habit, inflorescence, and variation in leaf size and shape: a, b, *Fosberg 48269* (holotype, US); c, *Fosberg 48269* (isotype, F); d, *Hodge 1115* (GH). Metric scales numbered in centimeters.

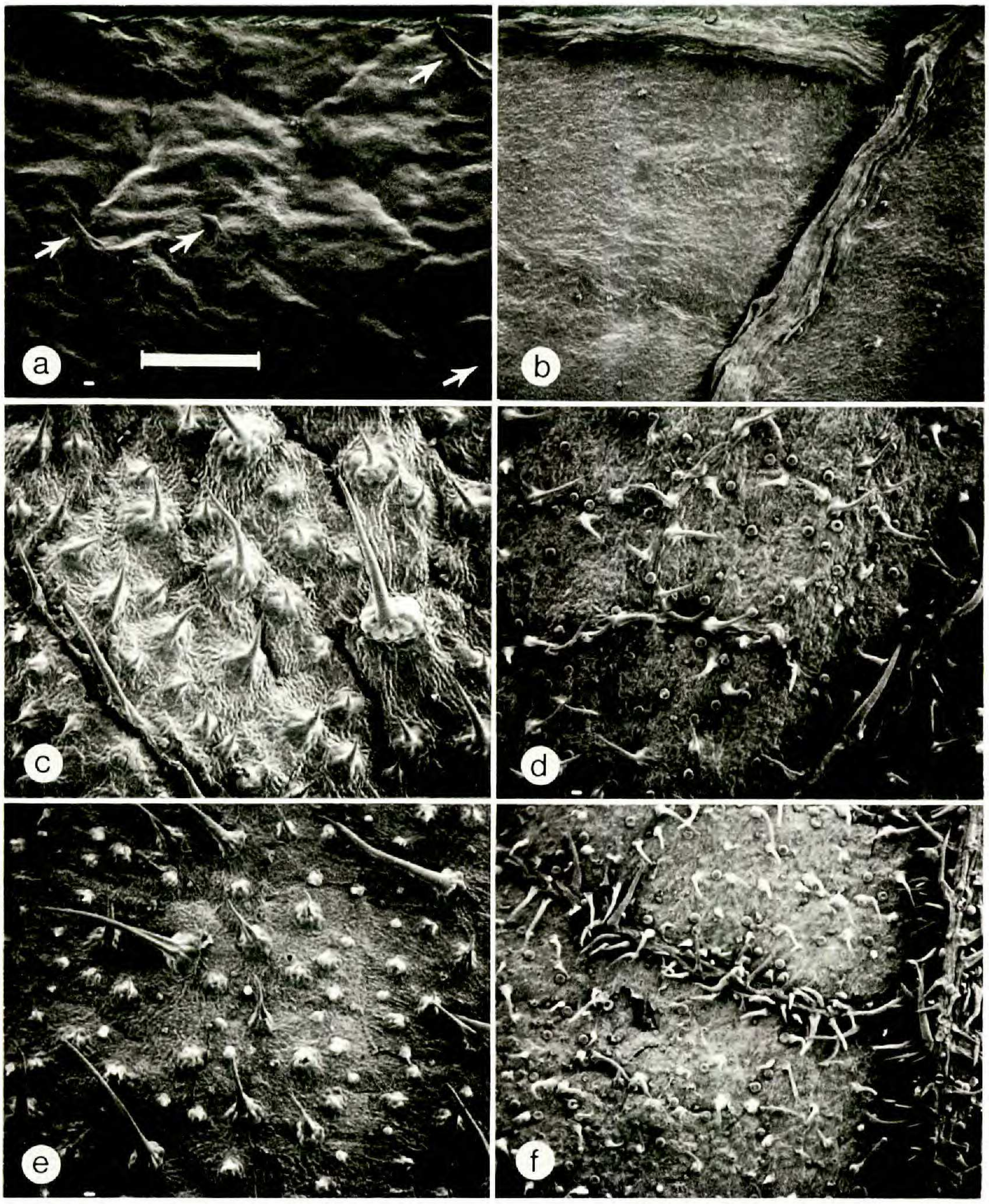


FIGURE 2. Scanning electron micrographs of adaxial (a, c, e) and abaxial (b, d, f) leaf surfaces of *Lantana* species occurring in Dominica: a, b, *L. hodgei* (*Nicolson 2102,* FTG), white arrows pointing to isolated hairs; c, d, *L. camara* (*Wilbur et al. 7665,* FTG); e, f, *L. urticifolia* (*Hodge 859,* GH), apparent basal bending of hairs primarily an artifact of foreshortening. Largest veins shown secondary. Scale bar = 0.5 mm.

schedula). Indeed, some workers would probably submerge all taxa of *Lantana* sect. *Camara* under *L. camara,* as Gibson (1970) did for the *Flora of Guatemala.* Nicolson (unpubl. ms.) calls for new approaches to augment morphology in the delineation of lantanas in the West Indies. Extrapolating from a limited sample of biosystematic and chromosomal studies (Sanders, 1987a, c), I believe there is sufficient reason for separating *L. camara* from *L. hodgei* and other species that have gone under the name *L. camara.* The structure of the abaxial

Pollen stainability of Lantana hodgei, L. urticifolia, and their intermediates.[a,b]

Taxon	Specimen	*N*[c]	% Stainability
L. hodgei	*Cooper 5* (F)	300	85
	Fosberg 48269 (US)	300	65
	Hodge 1115 (GH)	190	81
	Hodge & Hodge 1808 (GH)[d]	200	3
	Nicolson 2102 (FTG)	310	53
	A. C. Smith 10216 (A)[d]	200	4
Intermediate	*Hodge 858* (GH)	203	27
	Hodge 860 (GH)	291	35
	Hodge & Hodge 2592 (GH)	300	33
	Shillingford 120 (MO)	200	29
L. urticifolia	*Dey 69* (A) (Grenada)	303	58
	Hodge 858 (NY)	200	42
	Hodge 859 (GH)	200	35
	Howard 15236 (A) (Redonda)	226	74
	Lloyd 929 (NY)	300	37
	Stoffers 3004 (A) (Saba)	200	81

[a]Pollen from nearly open or open corollas removed from herbarium specimens and stained in lactophenol cotton-blue.

[b]Collections from Dominica unless indicated otherwise.

[c]Total number of pollen grains counted.

[d]Flowers blackened with drying and/or infested with insect larvae.

laminar hairs divides *Lantana* sect. *Camara* into two sets of taxa—a "*camara*-cohort," with conical, geniculate hairs (FIGURE 2b, d), and an "*urticifolia*-cohort," with slender, spreading hairs (FIGURE 2f). Each set includes one or more morphologically distinctive, endemic, and often diploid taxa, in addition to the more morphologically generalized (and hence overall "*camara*-like"), widespread, tetraploid ones (Sanders, 1986, 1987a–c). Characters with generalized states in both groups of tetraploids include growth habit, leaf shape and size, hairs of adaxial leaf surfaces (FIGURE 2c, e), bract shape and size, and flower size. Although the chromosome number of *L. hodgei* is unknown, in other characters this species exceeds the limits of variation of *L. camara* as much as do the other distinctive endemics of the "*camara*-cohort."

Lantana camara, as delimited here (including *L. aculeata* L.), is apparently infrequent on Dominica (Dominica, 1 km NW of Salisbury, *Wilbur et al. 7665* (F, FTG, LL, MO, US—*n.v.*)).

Lantana urticifolia (including *L. arida* Britton and *L. moritziana* Otto & Dietr.) is a widespread and variable species, ranging from Mexico and Cuba to Brazil. It is commonly encountered in Dominica in low-elevation scrub and man-made openings on the lower slopes (Dominica: without further locality, *Imray 229* (GH); Belle View, *Hodge 857* (GH); Fern Villa, *Hodge & Hodge 2177* (GH); Marigot, Mantipo R., *Hodge 858, p.p.* (NY, US); Roseau, *Hodge 859* (GH), *Lloyd 929* (NY); between Salybia and Hatton Garden, *Hodge 3201* (GH)).

Where human disturbance has allowed *Lantana hodgei* and *L. urticifolia* to come in contact, a spectrum of morphological intermediates between the two

are found (Dominica: Belfast, *Shillingford 120* (MO); between Belle View and Grand Bay, *Hodge 860* (GH); Marigot, Mantipo R., *Hodge 858, p.p.* (GH); Milton Estate, *Hodge & Hodge 2592* (GH)). Presumably these intermediates are hybrids, like those documented in Florida (Sanders, 1987a). The laminas of these plants are more nearly rounded to cordate at the base, adaxially sublustrous, and abaxially with a moderately dense mixture of filiform straight hairs and tapering geniculately antrorse hairs. The percent stainable pollen is low compared to that of either *L. hodgei* or *L. urticifolia* (TABLE). Indeed, the lower stainability of pollen of *L. urticifolia* from Dominica compared to that from other islands in the Lesser Antilles may suggest that Dominican *L. urticifolia* has undergone widespread introgression from *L. hodgei*. Note especially the apparent co-occurrence of *L. urticifolia* and intermediates (e.g., *Hodge 858*, cited above) on that island.

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NOTE ADDED IN PROOF. A specimen documenting the occurrence of *Lantana hodgei* outside of Dominica (Martinique, beyond L'Alena, *Bailey & Bailey 240* (NY)) has recently come to my attention.—R. W. S.